

# Machinist

## On-the-Job Checklist



	Level 1	Page 1/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs safety-related tasks	Become familiar with WHMIS, OH&S & safety practices	<input type="checkbox"/>
	Select & use PPE as well as various safety equipment	<input type="checkbox"/>
Organizes work	Interpret orthographic drawings	<input type="checkbox"/>
	Use dimensioning system	<input type="checkbox"/>
	Apply tolerances, section and auxiliary views	<input type="checkbox"/>
	Demonstrate isometric sketching	<input type="checkbox"/>
	Use engineered drawings	<input type="checkbox"/>
	Sketch parts	<input type="checkbox"/>
	Use steel rules, vernier scales, angular measuring tools & micrometers	<input type="checkbox"/>
Processes workplace material	Select appropriate material for task	<input type="checkbox"/>
	Use of hoisting, lifting & rigging equipment	<input type="checkbox"/>
	Mark workpiece for identification	<input type="checkbox"/>
	Perform quality control of the workpiece	<input type="checkbox"/>
Maintains machines, tooling & inspection equipment	Clean, lubricate & maintain machines	<input type="checkbox"/>
	Sharpen drill bits	<input type="checkbox"/>
	Fill machines with cutting fluid & lubricants	<input type="checkbox"/>
	Observe troubleshooting equipment	<input type="checkbox"/>
	Observe the maintaining of machine alignment	<input type="checkbox"/>
	Help inspect equipment	<input type="checkbox"/>

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# Machinist

## On-the-Job Checklist



	Level 1	Page 2/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs hand processes	Perform layout	<input type="checkbox"/>
	Saw workpiece	<input type="checkbox"/>
	File workpiece	<input type="checkbox"/>
	Perform hole making, threading & pressing operations	<input type="checkbox"/>
	Install thread inserts	<input type="checkbox"/>
	Deburr workpiece	<input type="checkbox"/>
	Broach, form & finish workpieces	<input type="checkbox"/>
Refurbishes components	Observe the disassembling and analyzing of components	<input type="checkbox"/>
Sets up & operates power saw	Select power saw	<input type="checkbox"/>
	Install saw blade, select speed & feed and adjust saw	<input type="checkbox"/>
	Set up work piece on power saw	<input type="checkbox"/>
	Perform straight & angle cuts using a power saw	<input type="checkbox"/>
	Perform the cutting of irregular material	<input type="checkbox"/>
Sets up drill press	Select drill press & plan operation of drilling	<input type="checkbox"/>
	Select drill press speed & feed	<input type="checkbox"/>
	Set up jig, fixtures and work holding devices	<input type="checkbox"/>
	Finish holes using drill press	<input type="checkbox"/>

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## On-the-Job Checklist



	Level 1	Page 3/3
Red Seal Tasks	On-The-Job Duties	Completed
Sets up & operates conventional lathes	Select conventional lathe	<input type="checkbox"/>
	Help plan operation of conventional lathe	<input type="checkbox"/>
	Help set up work holding device, tooling & accessories	<input type="checkbox"/>
	Help set up workpiece on conventional lathe	<input type="checkbox"/>
	Perform external & internal turning	<input type="checkbox"/>
	Perform grooving, parting, taper turning & knurling	<input type="checkbox"/>
	Cut basic 60-degree screw threads	<input type="checkbox"/>
Sets up & operates conventional milling machines	Use various conventional milling machines	<input type="checkbox"/>
	Become familiar with work holding devices & methods	<input type="checkbox"/>
	Perform vertical milling machine operations	<input type="checkbox"/>

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# Machinist

## On-the-Job Checklist



	Level 2	Page 1/2
Red Seal Tasks	On-The-Job Duties	Completed
Processes workpiece material	Perform heat treatment processes	<input type="checkbox"/>
	Perform quality control	<input type="checkbox"/>
	Sketch parts	<input type="checkbox"/>
Maintains machines, tooling & inspection equipment	Troubleshoot equipment with supervision	<input type="checkbox"/>
	Maintain machine alignment	<input type="checkbox"/>
Refurbishes components	Disassemble gear box & analyze components	<input type="checkbox"/>
	Assemble gear box	<input type="checkbox"/>
Sets up & operates conventional lathes	Become familiar with carbide tooling	<input type="checkbox"/>
	Cut precision tapers	<input type="checkbox"/>
	Cut tapered thread	<input type="checkbox"/>
	Use a steady rest & follower rest	<input type="checkbox"/>
Sets up & operates conventional milling machines	Perform vertical milling & horizontal milling	<input type="checkbox"/>
	Use indexing devices	<input type="checkbox"/>
	Mill surface, profiles, pockets, slots, grooves and keyways	<input type="checkbox"/>
	Cut gears & splines	<input type="checkbox"/>
	Drill & ream holes	<input type="checkbox"/>
	Cut countersink bores, chamfers & spot faces	<input type="checkbox"/>
	Perform tapping	<input type="checkbox"/>
	Bore holes	<input type="checkbox"/>

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# Machinist

## On-the-Job Checklist



	Level 2	Page 2/2
Red Seal Tasks	On-The-Job Duties	Completed
Sets up & operates precision grinding machines	Select precision grinding machine	<input type="checkbox"/>
	Plan operation of grinding	<input type="checkbox"/>
	Set up work holding devices	<input type="checkbox"/>
	Observe the mounting of a grinding wheel	<input type="checkbox"/>
	Set up grinding accessories	<input type="checkbox"/>
	Set up workpiece	<input type="checkbox"/>
	Select speeds & feeds	<input type="checkbox"/>
	Grinds flat surface using grinder	<input type="checkbox"/>
Performs CNC programming	Help create process documents	<input type="checkbox"/>
	Help create manual input program	<input type="checkbox"/>
	Transfer program to & from control memory	<input type="checkbox"/>
Sets up & operates CNC machines	Select tooling & tool holders	<input type="checkbox"/>
	Set up tooling & tool holders	<input type="checkbox"/>
	Set up workpiece	<input type="checkbox"/>
	Establish work datum	<input type="checkbox"/>
	Verify program	<input type="checkbox"/>
	Adjust offsets	<input type="checkbox"/>
	Monitors machining process	<input type="checkbox"/>
	Interrupt & restart program cycle	<input type="checkbox"/>

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# Machinist

## On-the-Job Checklist



	Level 3	Page 1/3
Red Seal Tasks	On-The-Job Duties	Completed
Maintains machines, tooling & inspection equipment	Inspect & maintain lathes	<input type="checkbox"/>
	Inspect & maintain milling machines	<input type="checkbox"/>
	Inspect & maintain horizontal boring mills	<input type="checkbox"/>
	Inspect & maintain precision grinders	<input type="checkbox"/>
Sets up & operates conventional milling machines	Plan operation of milling	<input type="checkbox"/>
	Set up work holding device	<input type="checkbox"/>
	Set up tooling for milling machine	<input type="checkbox"/>
	Set up milling accessories	<input type="checkbox"/>
	Set up workpiece on milling machine	<input type="checkbox"/>
	Select machine speeds & feeds	<input type="checkbox"/>
Sets up precision grinding machines	Select precision grinding machine type	<input type="checkbox"/>
	Plans operation of grinding machine	<input type="checkbox"/>
	Set up work holding device for precision grinding machine	<input type="checkbox"/>
	Mount grinding wheel	<input type="checkbox"/>
	Set up grinding accessories	<input type="checkbox"/>
	Set up workpiece on precision grinding machine	<input type="checkbox"/>
Operates up precision grinding machines	Select speeds & feeds	<input type="checkbox"/>
	Grinds profile	<input type="checkbox"/>
	Grinds internal & external cylindrical & tapered surfaces	<input type="checkbox"/>
	Grinds tools & cutters	<input type="checkbox"/>
	Performs honing	<input type="checkbox"/>

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## On-the-Job Checklist



	Level 3	Page 2/3
Red Seal Tasks	On-The-Job Duties	Completed
Performs CNC programming	Create process documentation	<input type="checkbox"/>
	Create manual input program	<input type="checkbox"/>
	Creates 2D & 3D models	<input type="checkbox"/>
	Programs using CAM	<input type="checkbox"/>
Sets up & and operates CNC machines	Select tooling & tool holders for CNC machines	<input type="checkbox"/>
	Sets up tooling & tool holders on CNC machines	<input type="checkbox"/>
	Sets up workpiece on CNC machines	<input type="checkbox"/>
	Establishes work datum	<input type="checkbox"/>
	Adjusts offsets	<input type="checkbox"/>
	Optimize program	<input type="checkbox"/>
Power transmission	Identify power transmitting threads	<input type="checkbox"/>
	Measure power transmitting threads	<input type="checkbox"/>
	Classify key drives	<input type="checkbox"/>
	Apply tolerances to keys & key seats	<input type="checkbox"/>
	Identify splines	<input type="checkbox"/>
	Identify common shaft coupling arrangements	<input type="checkbox"/>
	Identify common types of clutches	<input type="checkbox"/>
	Identify types of gears	<input type="checkbox"/>

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# Machinist On-the-Job Checklist



	Level 3	Page 3/3
Red Seal Tasks	On-The-Job Duties	Completed
Cutting tool technology	Select cutting tool geometries	<input type="checkbox"/>
	Use hole making tools	<input type="checkbox"/>
	Identify surface finish	<input type="checkbox"/>
	Optimize metal removal rates	<input type="checkbox"/>

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# Machinist

## On-the-Job Checklist



	Level 4	Page 1/1
Red Seal Tasks	On-The-Job Duties	Completed
Workpiece material processing	Perform quality control of workpieces	<input type="checkbox"/>
Sets up & and operates CNC machines	Set tool offsets	<input type="checkbox"/>
	Calculate coordinates	<input type="checkbox"/>
	Construct & run a CNC program	<input type="checkbox"/>
	Perform mill programing	<input type="checkbox"/>
	Program a 3-axis mill using CAM	<input type="checkbox"/>
	Machine a part using CAM	<input type="checkbox"/>
Material select selection & heat treatment	Know properties of material	<input type="checkbox"/>
	Perform material testing	<input type="checkbox"/>
	Know properties of tool steels	<input type="checkbox"/>
	Perform heat treatment of steel	<input type="checkbox"/>
Advanced machine tooling	Perform dividing head operations	<input type="checkbox"/>
	Perform bevel gear milling	<input type="checkbox"/>
	Knowledge of interference & standard fits	<input type="checkbox"/>
	Perform helical milling	<input type="checkbox"/>
	Independently plan & perform jobs	<input type="checkbox"/>

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## On-the-Job Checklist



### Information Regarding the Checklist

Saskatchewan Apprenticeship and Trade Certification Commission's (SATCCs) On-The-Job Checklist provides a complete list of trade-specific Red Seal tasks for apprentices to complete under the supervision of a journeyperson. This work should be completed prior to attending the technical training level under which the duties are listed (e.g. Level 1 completed prior to attending Level 1 technical training).

Completing this checklist will ensure that apprentices are exposed to the full scope of a particular Red Seal trade throughout their apprenticeship program. It will also help prepare apprentices for each level of technical training by performing work on-the-job relating specifically to topics covered later on. The trade-specific tasks listed have been reviewed by certified journeypersons in Saskatchewan for their accuracy and have been set to an appropriate skill level.

An apprentice spends approximately 85% of their apprenticeship term training on-the-job. It is the both the apprentice and journeyperson or approved tradesperson's responsibility to supervise an apprentice's practical skills development during their program.

To promote transparency and consistency, this document aligns with the 2018 Machinist Red Seal Occupational Standard (Employment and Social Development Canada).

A complete version of the Occupational Standard can be found at [www.red-seal.ca](http://www.red-seal.ca)

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